Amendments to the Claims:

1. A method of assigning Walsh codes comprising the steps of:

(a) receiving as input a status vector for a Walsh code system of length 2^n;

(b) creating a new status vector for a selected Walsh code length of $j = 2^{n-k}$ from the status vector;

(c) creating a search mask for the selected Walsh code length of j;

(d) creating a search sequence for the selected Walsh code length of j; and

(e) searching the search sequence with the search mask to find the next available Walsh code.

2. The method of claim 1 wherein step (b) comprises the steps of:

(b1) copying the status vector to a new status vector for the desired Walsh code length j;

(b2) initializing a loop index k to zero;

(b3) incrementing the loop index k by one;

(b4) replacing the new status vector with the new status vector OR'd with the new status vector shifted right by 2^{n-k} bits; and

(b5) repeating steps (b3) and (b4) until 2^{n-k} equals the desired Walsh code length j.

3. The method of claim 1 wherein step (e) comprises the steps of:

(e1) shifting the search mask left by a number of bits corresponding to a next search sequence entry M to generate a shifted search mask;

(e2) performing an AND operation between the shifted search mask and the new status vector; and

(e3) generating as output a Walsh code M of length j if the result of step (e2) equals zero.

4. (Currently Amended) The method of claim 3 further comprising the steps of:

([[e5]]e4) returning to step (e1) if the search sequence entry M is not last in the search sequence and if the result of step (e2) equals the search mask; and

([[e6]]e5) generating as output a null Walsh code indicating that no Walsh code is available at the selected length j if M is last in the search sequence.

5. (Currently Amended) The method of claim 4 further comprising the steps of:

([[e7]]e6) creating a new search mask for a Walsh code of the selected length j if the result of step (e2) does not equal the search mask;

([[e8]]e7) shifting the new search mask left by a number of bits corresponding to the search sequence entry M to generate a shifted search vector;

([[e9]]e8) performing an AND operation between the shifted search vector and the new status vector; and

([[e10]]e9) generating as output a Walsh code M of length j if the result of step ([[e9]]e8) equals zero.

6. (Currently Amended) The method of claim 5 further comprising the step of ([[e11]]e10) generating as output a Walsh code $M + 2^{n-k}$ of length j if the result of step ([[e9]]e8) does not equal zero.

7. A method of tracking an assignment status of each Walsh code in a Walsh code system comprising the steps of:

(a) receiving as input a status vector, an assignment indicator, a Walsh code parameter M, and a Walsh code length parameter j wherein M and j are positive integers;

(b) retrieving a bit mask [M,j]; and

(c) updating the status vector as a function of the Walsh code parameter M, the assignment indicator, and the bit mask [M,j].

8. The method of Claim 7 wherein step (c) comprises the following steps:

(c1) checking whether the assignment indicator indicates an assignment or a release of Walsh code M of length j;

(c2) performing an OR operation between the status vector and the bit mask [M,j] if the assignment indicator indicates an assignment; and

(c3) replacing the status vector with a result of the OR operation between the status vector and the bit mask [M,j] to set covered Walsh codes in the status vector.

9. The method of Claim 7 wherein step (c) comprises the following steps:

(c1) performing a negation operation on the bit mask [M,j] if the assignment indicator indicates a release;

(c2) performing an AND operation between the status vector and the result of the negation operation; and

(c3) replacing the status vector with a result of the AND operation between the status vector and the result of the negation operation to clear uncovered Walsh codes in the status vector.

10. (Currently Amended) A computer program ~~product~~ system comprising:

a computer readable medium ~~for embodying a computer program~~ for input of a computer executable program to a computer; and

a computer executable program embodied in the computer readable medium for causing the computer to perform the following functions:

(a) receiving as input a status vector for a Walsh code system of length 2^n;

(b) creating a new status vector for a selected Walsh code length of $j = 2^{n-k}$ from the status vector;

(c) creating a search mask for the selected Walsh code length of j;

(d) creating a search sequence for the selected Walsh code length of j; and

(e) searching the search sequence with the search mask to find an available Walsh code.

11. The computer program ~~product~~ system of claim 10 wherein step (b) comprises the steps of:

(b1) copying the status vector to a new status vector for the desired Walsh code length *j*;

(b2) initializing a loop index *k* to zero;

(b3) incrementing the loop index *k* by one;

(b4) replacing the new status vector with the new status vector OR'd with the new status vector shifted right by 2^{n-k} bits; and

(b5) repeating steps (b3) and (b4) until 2^{n-k} equals the desired Walsh code length *j*.

12. The computer program ~~product~~ system of claim 10 wherein step (e) comprises the steps of:

(e1) shifting the search mask left by a number of bits corresponding to a next search sequence entry *M* to generate a shifted search mask;

(e2) performing an AND operation between the shifted search mask and the new status vector; and

(e3) generating as output a Walsh code *M* of length *j* if the result of step (e2) equals zero.

13. (Currently Amended) The computer program ~~product~~ system of claim 12 further comprising the steps of:

([[e5]]e4) returning to step (e1) if the search sequence entry *M* is not last in the search sequence and if the result of step (e2) equals the search mask; and

([[e6]]e5) generating as output a null Walsh code indicating that no Walsh code is available at the selected length *j* if the search sequence entry *M* is last in the search sequence.

14. (Currently Amended) The computer program ~~product~~ system of claim 13 further comprising the steps of:

([[e7]]e6) creating a new search mask for a Walsh code of the selected length *j* if the result of step (e2) does not equal the search mask;

([[e8]]e7) shifting the new search mask left by a number of bits corresponding to the search sequence entry *M* to generate a shifted search vector;

([[e9]]e8) performing an AND operation between the shifted search vector and the new status vector; and

([[e10]]e9) generating as output a Walsh code M of length j if the result of step ([[e9]]e8) equals zero.

15. (Currently Amended) The computer program ~~product~~ system of claim 14 further comprising the step of ([[e11]]e10) generating as output a Walsh code $M + 2^{n-k}$ of length j if the result of step ([[e9]]e8) does not equal zero.

16. A computer program ~~product~~ system comprising:

a computer readable medium ~~for embodying a computer program~~ for input of an executable program to a computer; and

a computer executable program embodied in the computer readable medium for causing the computer to perform the following functions:

(a) receiving as input a status vector, an assignment indicator, a Walsh code parameter M, and a Walsh code length parameter j wherein M and j are positive integers;

(b) retrieving a bit mask [M,j]; and

(c) updating the status vector as a function of the Walsh code parameter M, the assignment indicator, and the bit mask [M,j].

17. The computer program ~~product~~ system of Claim 16 wherein step (c) comprises the following steps:

(c1) checking whether the assignment indicator indicates an assignment or a release of Walsh code M of length j;

(c2) performing an OR operation between the status vector and the bit mask [M,j] if the assignment indicator indicates an assignment; and

(c3) replacing the status vector with a result of the OR operation between the status vector and the bit mask [M,j] to set covered Walsh codes in the status vector.

18. The computer program ~~product~~ system of Claim 16 wherein step (c) comprises the following steps:

(c1) performing a negation operation on the bit mask [M_j] if the assignment indicator indicates a release;

(c2) performing an AND operation between the status vector and the result of the negation operation; and

(c3) replacing the status vector with a result of the AND operation between the status vector and the result of the negation operation to clear uncovered Walsh codes in the status vector.